

JUPITER™

Terminal State Code Definitions User Guide



НАДНАМИ

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СПУТНИКОВАЯ СВЯЗЬ И НАВИГАЦИЯ

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Revision History

Version	Date Modified	Author	Comments
1.0	01/25/2012	Matt Baer, Krishna Samavedam , Venkat Ganesan	Draft
1.1	02/03/2012	Matt Baer	Provide information on Uplink state codes
1.2	02/15/2012	Venkat Ganesan	Added PEP & FAP state code definitions.
1.3	02/17/2012	Dan Rivers	Added BIST state code definitions
1.4	02/17/2012	P. J. O'Neil	Added ODU Monitor state code definitions
1.5	04/08/2012	V Ganesan	Added trouble shooting steps for Association, PEP, FAP & Sysinfo.
1.6	04/11/2012	Matt Baer	Add additional state codes and provide troubleshooting steps for IDU, Cable, & Downlink
1.7	05/24/2012	Matt Baer	Update SBC state codes and provide state code summary table
1.8	08/09/2012	Matt Baer	Provide LAN and Web Acceleration (WAC) state codes. Also provide a brief overview of terminal state codes.

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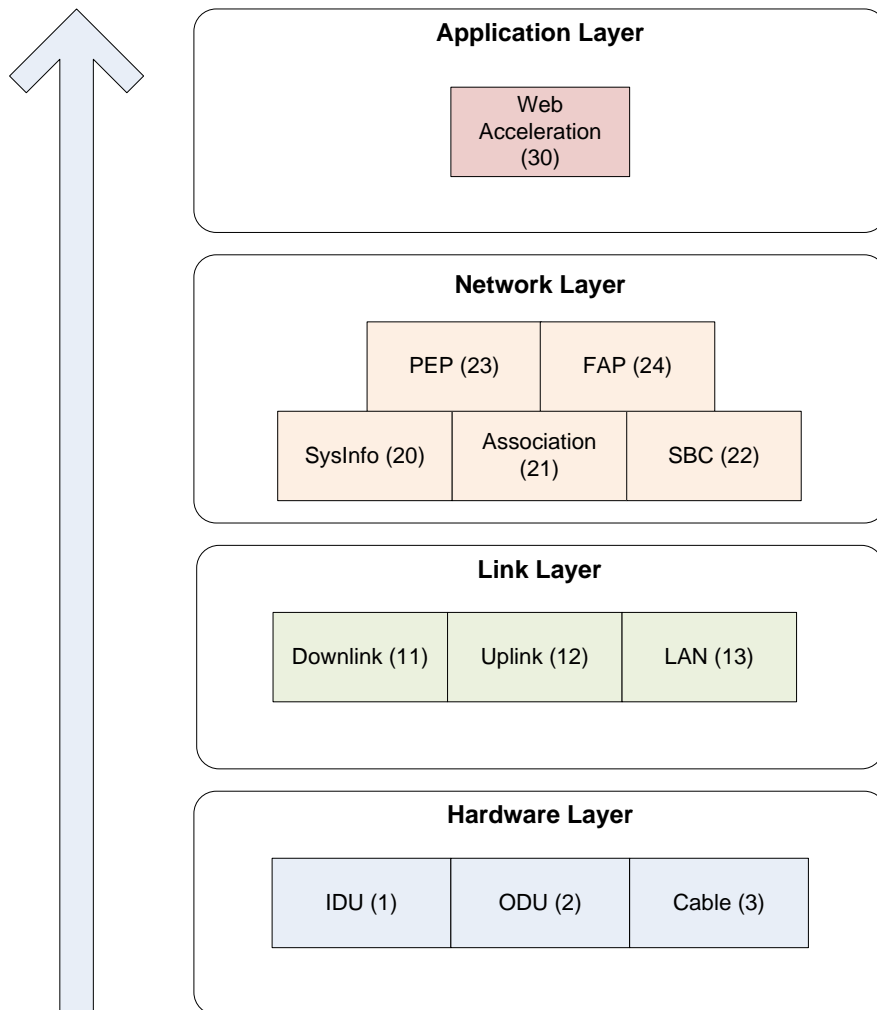
1.0 STATE CODE OVERVIEW

The Jupiter terminal state code provides a concise indicator of error or marginal conditions (states) when the terminal is not operating in a fully operational (healthy) state. The state code provides a hierarchical representation of the *current* status of the terminal.

The state code is a 3 digit value, presented in X.Y.Z format, where:

- **X** represents the Component/Process
- **Y** represents the Functional area
- **Z** represents the specific issue within the Functional area

Each Component/Process, as shown in the figure below, maintains its own state code, independent of the other processes running in the terminal.



In addition to each Component/Process state code, the terminal maintains a *System State Code* that indicates the overall state code for the terminal. Typically this is the *lowest* process state code as the system state code works as a layered model (similar to OSI Network Model).

For example – if the Uplink has a problem, then this will also cause problems in Association, PEP, and Web Acceleration. In this case the Uplink problem is the root cause/problem that is affecting Association, PEP, and Web Acceleration. Therefore in this example, the System State Code would be reported as the corresponding Uplink state code.

A state code of **0.0.0** indicates no issues and the terminal should be operating in a healthy fully operational state. This is the System State code (and individual Component/Process state codes) you want to achieve.

2.0 STATE CODE SUMMARY

The table below provides a summary of the Jupiter Terminal State Codes. Section 3.0 provides detailed descriptions of each state code and suggested troubleshooting steps.

State Code	State Code Text
<i>IDU</i>	
1.1.1	MAC Address invalid
1.1.2	LAN MAC PHY test failed
1.1.3	Tx synthesizer lock test failed
1.1.4	Rx Tuner lock test failed
1.1.5	VCO monitor test failed
1.1.6	ODU voltage test failed
1.1.7	Key check failed
1.1.8	RAM test failed
1.2.1	Temperature greater than configured threshold
<i>ODU</i>	
2.1.1	Unable to communicate with Outdoor Unit
2.1.2	Outdoor Unit reports low voltage
2.1.3	Outdoor Unit reports PLL unlocked
2.1.4	Invalid Radio Serial Number and/or Part Number
<i>Cable</i>	
3.1.1	Satellite cable appears to be unplugged or broken
3.1.2	Satellite cable appears to be too long or inferior quality
<i>Downlink</i>	
11.1.1	Downlink sequencer firmware is not running
11.1.2	Downlink kernel packet processor is not running
11.1.3	Control message queue watermark is above threshold
11.1.4	Downlink Sequencer Failed to load key
11.1.5	Downlink acquisition and/or FLL thread is not running
11.2.1	Outroute is not locked
11.2.2	Outroute is locked to an unknown carrier
11.2.3	Outroute is locked to the wrong carrier
11.2.4	Outroute has lost lock due to excessive LNB frequency drift
11.2.5	Outroute has lost lock
11.3.1	FLL is not locked
11.4.1	ACM is not enabled or trajectory table is missing
11.4.2	ACM is operating at the lowest Modcod
<i>Uplink</i>	
12.1.1	Uplink firmware failed to load
12.1.2	Transmission is barred
12.1.3	Antenna pointing has not been validated
12.1.4	Transmission test in progress
12.1.5	Transmission TFIX (test mode) in progress
12.2.1	Outroute is not locked
12.2.2	FLL is not locked
12.3.1	Not receiving timing packets
12.3.2	Invalid timing packet information
12.3.3	Clock synchronization error

State Code	State Code Text
12.3.4	Timing adjustment needed
12.4.1	Not receiving inroute group definition packets
12.4.2	Unable to select a valid inroute group
12.4.3	No transmit frequencies defined
12.4.4	Unable to select inroute group due to no Bootstrap Aloha metric
12.4.5	Unable to select inroute group due to no Ranging metric
12.4.6	Unable to select inroute group due to no User Load metric
12.5.1	Failed to successfully range any rate
12.5.2	Failed to successfully range all available rates
12.5.3	No inroute groups available at successfully ranged rates
12.5.4	Adaptive Inroute Selection (AIS) is not enabled
12.5.5	Lowest Symcod in the AIS Trajectory Table selected
12.6.1	Not receiving bandwidth allocation packets
12.6.2	No bandwidth allocation information available
12.6.3	No Aloha allocation information available
12.6.4	No Bootstrap Aloha allocation information available
12.7.1	Aloha transmission is unsuccessful
12.7.2	Bootstrap Aloha transmission is unsuccessful
12.8.1	Requesting ranging
12.8.2	Computing ranging values
12.8.3	Sending ranging results
12.9.1	Not receiving inroute power feedback packets
LAN	
13.1.1	LAN cable is not attached
System Information (SysInfo)	
20.1.1	Not receiving Management Router Advertisement (MRA) messages
20.1.2	Not receiving Management System (MS) Information messages
Association	
21.1.1	System Assigned Identifier (SAI) is not available
21.1.2	Not receiving Management Router Advertisement (MRA) messages
21.1.3	All Association requests rejected, entering Backoff State.
21.1.4	Creating Data IPGW Pool
21.1.5	Associating with Data IPGW
21.2.1	Creating Wall Garden IPGW Pool
21.2.2	Associating with Wall Garden IPGW
21.2.3	Associated with Walled Garden IPGW for an Unknown Reason
21.2.4	Associated with Wall Garden IPGW for Terminal Activation
21.2.5	Associated with Wall Garden IPGW for Service Activation
21.2.6	Associated with Wall Garden IPGW due to Empty Data IPGW pool
21.2.7	Associated with Wall Garden IPGW due to Signature mismatch
21.2.8	Associated with Wall Garden IPGW due to Data IPGW Loading
21.2.9	Associated with Wall Garden IPGW due to Service Mismatch
21.2.10	Associated with Wall Garden IPGW due to Data IPGW Connection Failure
21.2.11	Associated with Wall Garden IPGW due to Billing suspension
21.2.12	Associated with Wall Garden IPGW due to Seasonal suspension
21.2.13	Associated with Wall Garden IPGW due to Quality Assurance Testing
SBC	
22.1.1	Waiting for installation parameters or terminal swap information

State Code	State Code Text
22.1.2	SBC configuration file is invalid or not found
22.1.3	Hardware configuration file is invalid or not found
22.1.4	Unable to select beam based on provided terminal location
22.2.1	Pointing In Progress – Outroute not locked
22.2.2	Pointing In Progress – Outroute locked
22.2.3	Pointing In Progress – Outroute not locked and polarization change required
22.2.4	Pointing In Progress – Outroute locked but not receiving UBIP messages
22.2.5	Pointing In Progress – Outroute locked but UBIP does not indicate any available outroutes
22.3.1	Ranging In Progress
22.3.2	Registration In Progress
22.3.3	Waiting for Configuration
22.3.10	Bad Downlink state
22.3.11	Unable to transmit successfully to the Gateway
22.3.12	Failed to successfully range most robust rate
22.3.13	Bad Uplink State
22.3.14	Registration failed because terminal failed to resolve NMS address
22.3.15	Registration failed because terminal received invalid response from NMS
22.3.16	Registration failed because terminal failed to authenticate NMS
22.3.21	Registration failed due to invalid terminal serial number
22.3.22	Registration failed due to blacklisted terminal serial number
22.3.23	Registration failed because terminal swap not allowed
22.3.24	Registration failed because terminal move not allowed
22.3.25	Registration failed because registration information was not provided
22.3.26	Registration failed because NMS failed to authenticate terminal
22.3.27	Registration failed because NMS received simultaneous registration messages
22.3.28	Registration failed because challenge response timeout
22.3.29	Registration failed because NMS processing failure
PEP	
23.0.1	All Backbones are down
23.0.2	PEP is disabled
23.0.3	No Classifier rule defined
FAP	
24.1.1	Download Throttled
24.1.2	FAP information not available
Web Acceleration (WAC)	
30.1.1	Web acceleration connection in backoff state
30.2.1	Web acceleration Disabled by user
30.2.2	Web acceleration Disabled via configuration

3.0 DETAILED STATE CODE DESCRIPTIONS AND TROUBLESHOOTING

3.1 IDU & ODU Hardware State Codes

The IDU & ODU state codes indicate issues observed with the IDU, ODU, or the IFL cabling between the IDU and ODU.

3.1.1 IDU

The IDU state codes indicate any BIST failures and over temperature threshold conditions.

All IDU state codes will start with **1**.

3.1.1.1 BIST

<i>State Code</i>	1.1.1
<i>State Code Text</i>	MAC Address invalid
<i>Severity</i>	Error
<i>Description</i>	The MAC address format is 00:80:AE:xx:xx:xx, the last 6 characters of which are unique.
<i>Troubleshooting Steps</i>	If problem persists after a reboot, the terminal (IDU) should be replaced.

<i>State Code</i>	1.1.2
<i>State Code Text</i>	LAN MAC PHY test failed
<i>Severity</i>	Error
<i>Description</i>	This test reads the LAN PHY id register. The value returned should be 0x141 indicating the presence of the Marvell Switch.
<i>Troubleshooting Steps</i>	If problem persists after a reboot, the terminal (IDU) should be replaced.

<i>State Code</i>	1.1.3
<i>State Code Text</i>	Tx synthesizer lock test failed
<i>Severity</i>	Error
<i>Description</i>	The Danube synthesizers lock and unlock status are checked as part of this test.
<i>Troubleshooting Steps</i>	If problem persists after a reboot, the terminal (IDU) should be replaced.

<i>State Code</i>	1.1.4
<i>State Code Text</i>	Rx Tuner lock test failed
<i>Severity</i>	Error
<i>Description</i>	The Maxim tuners lock and unlock status are checked as part of this test.
<i>Troubleshooting Steps</i>	If problem persists after a reboot, the terminal (IDU) should be replaced.

<i>State Code</i>	1.1.5
<i>State Code Text</i>	VCO monitor test failed
<i>Severity</i>	Error
<i>Description</i>	This test measures the VCO monitor voltage and verifies that it is within the

	specified limits.
Troubleshooting Steps	If problem persists after a reboot, the terminal (IDU) should be replaced.

State Code	1.1.6
State Code Text	ODU voltage test failed
Severity	Error
Description	The 48VDC is measured and verified that it is within the specified limits.
Troubleshooting Steps	If problem persists after a reboot, the terminal (IDU) should be replaced.

State Code	1.1.7
State Code Text	Key check failed
Severity	Error
Description	This test checks that the terminal has a valid key and serial number
Troubleshooting Steps	If problem persists after a reboot, the terminal (IDU) should be replaced.

State Code	1.1.8
State Code Text	RAM test failed
Severity	Error
Description	A non-exhaustive RAM test is performed during this test.
Troubleshooting Steps	If problem persists after a reboot, the terminal (IDU) should be replaced.

3.1.1.2 Temperature

State Code	1.2.1
State Code Text	Temperature greater than configured threshold
Severity	Marginal
Description	The internal temperature of the IDU has exceeded the configured maximum threshold.
Troubleshooting Steps	Ensure that the IDU (terminal) is in a well ventilated area and there are no obstructions that may be blocking the air vents of the terminal.

3.1.2 ODU

The ODU state codes indicate any ODU alarms.

All ODU state codes will start with **2**.

State Code	2.1.1
State Code Text	Unable to communicate with Outdoor Unit
Severity	Error
Description	IDU cannot establish communication with ODU over the IFL cable via the DiSEqC protocol.
Troubleshooting Steps	Check that the IFL cable is intact and securely connected at each end. Then replace ODU. Lastly, replace IDU.

State Code	2.1.2
State Code Text	Outdoor Unit reports low voltage
Severity	Error
Description	Low voltage output from internal regulator in ODU
Troubleshooting Steps	First, check that the IFL cable is intact and securely connected at each end. Then replace ODU. Lastly, replace IDU

State Code	2.1.3
State Code Text	Outdoor Unit reports PLL unlocked
Severity	Error
Description	The ODU is unable to lock onto the IF carrier from the ODU. This could be caused by a fault in the ODU or IFU or a poor IFL connection.
Troubleshooting Steps	First, check that the IFL cable is intact and securely connected at each end. Then replace the ODU. Lastly, replace the IDU.

State Code	2.1.4
State Code Text	Invalid Radio Serial Number and/or Part Number
Severity	Error
Description	The radio is not programmed with valid information
Troubleshooting Steps	Replace the ODU.

3.1.3 Cable

The Cable state codes indicate *perceived* issues with the cabling from the IDU to the ODU.

All Cable state codes will start with **3**.

State Code	3.1.1
State Code Text	Satellite cable appears to be unplugged or broken
Severity	Error
Description	Although there is no ‘cable check’ that the software can execute, the Automatic Gain Control (AGC) setting to the receive tuner can be examined to predict that a cable is unplugged. For this state code, the AGC is near its maximum value which typically indicates an unplugged cable or bad connector.
Troubleshooting Steps	Verify that the satellite cable is attached well to the IDU (terminal). If possible, also check the satellite cable connection to the ODU. A truckroll may be required if the connection to the ODU can’t be verified.

State Code	3.1.2
State Code Text	Satellite cable appears to be too long or inferior quality
Severity	Error

<i>Description</i>	Although there is no 'cable check' that the software can execute, the Automatic Gain Control (AGC) setting to the receive tuner can be examined to predict that a cable is unplugged. For this state code, the AGC is higher than the normal operating range which typically indicates a cable that is too long or of inferior quality.
<i>Troubleshooting Steps</i>	If possible, verify that the cable length is within spec (150 feet?) and is RG-6. A truckroll may be required if the cable condition can't be verified.

3.2 Downlink State Codes

The Downlink state codes indicate any issues or warnings in the Downlink (outroute) functionality of the terminal.

All Downlink state codes start with **11**.

There are four (4) functional areas monitored in the Downlink:

- *Downlink Driver* – Driver interface to the downlink hardware. Functional code is 1
- *Outroute Acquisition* – Outroute acquisition. Functional code is 2
- *FLL* – Frequency Locked Loop (FLL) algorithm. Functional code is 3
- *ACM* – Adaptive Coding & Modulation (ACM) algorithm. Functional code is 4

3.2.1 Downlink Driver

<i>State Code</i>	11.1.1
<i>State Code Text</i>	Downlink sequencer firmware is not running
<i>Severity</i>	Error
<i>Description</i>	The downlink sequencer receives downlink packets from the hardware, performs decryption on the packets if required, and performs some packet reassembly. In this state code, the ‘heartbeat’ of the sequencer is not incrementing indicating that the sequencer is either not running or is stuck.
<i>Troubleshooting Steps</i>	Reboot the terminal. If the problem persists after reboot, then escalate. The terminal <i>may</i> have a corrupt software image, so forcing the terminal into fallback mode may help.

<i>State Code</i>	11.1.2
<i>State Code Text</i>	Downlink kernel packet processor is not running
<i>Severity</i>	Error
<i>Description</i>	The downlink kernel driver receives partial or complete packets from the downlink sequencer, reassembles packet if necessary, and forwards complete packets. In this state code, the downlink kernel driver is either not loaded or is stuck.
<i>Troubleshooting Steps</i>	Reboot the terminal. If the problem persists after reboot, then escalate. The terminal <i>may</i> have a corrupt software image, so forcing the terminal into fallback mode may help.

<i>State Code</i>	11.1.3
<i>State Code Text</i>	Control message queue watermark is above threshold
<i>Severity</i>	Marginal
<i>Description</i>	Control messages are sent from the downlink kernel packet processor to the Uplink process. In this statecode, the uplink process is not processing the control messages quick enough.
<i>Troubleshooting Steps</i>	If this problem persists, then reboot the terminal. If the problem reoccurs, then escalate. Another process may be consuming too much of the CPU causing the uplink process to not run frequently enough.

State Code	11.1.4
State Code Text	Downlink Sequencer Failed to load key
Severity	Marginal
Description	The downlink sequencer was unable to load a decryption key.
Troubleshooting Steps	Reboot the terminal. If the problem reoccurs, then escalate. If the terminal received a corrupted key during commissioning, then re-commissioning the terminal may resolve this issue.

State Code	11.1.5
State Code Text	Downlink acquisition and/or FLL thread is not running
Severity	Error
Description	The downlink process contains demod acquisition and FLL threads of execution. In this state code, one or both of these threads have stopped executing.
Troubleshooting Steps	Reboot the terminal. If the problem reoccurs, then escalate.

3.2.2 Outroute Acquisition

State Code	11.2.1
State Code Text	Outroute is not locked
Severity	Error
Description	The terminal is unable to acquire the outroute.
Troubleshooting Steps	<p>Assuming no severe weather conditions at the terminal or Gateway locations and no Gateway issues (e.g. SatGW down), then this problem typically points to an installation issue at the terminal site.</p> <p>If possible, verify the outroute tuning configuration parameters for the terminal. Given the Beam ID and Outroute ID, lookup what the Over-the-Air Downlink Frequency and Symbol rate should be. Verify that the terminal is using the same outroute configuration. Also, verify that the L-Band tuning frequency is as expected based on the OTA frequency and the installed LNB.</p> <p><i>*** Probably should do a separate write-up on how to verify outroute tuning configuration</i></p>

State Code	11.2.2
State Code Text	Outroute is locked to an unknown carrier
Severity	Error
Description	The terminal has locked to an outroute, but there is no carrier information message (OSDP) present
Troubleshooting Steps	<p>This would typically occur if OSDP messages are not being sent from the Gateway. Verify that the associated SatGW (based on Beam ID and Outroute ID) at the Gateway site is transmitting OSDP messages.</p> <p>This <i>may</i> occur if the signal quality is very low (e.g. in the 30s) and the OSDP message is not being received. Assuming no weather conditions at the terminal, a truckroll may be warranted to improve the signal quality.</p>

	Another possibility is that the terminal antenna is not pointed to a Jupiter satellite or configured with a Jupiter outroute. This would typically only occur at installation time.
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State Code	11.2.3
State Code Text	Outroute is locked to the wrong carrier
Severity	Error
Description	The terminal has locked to an outroute, but the carrier information message from the OSDP message does not match what is configured at the terminal.
Troubleshooting Steps	This would typically only occur at install time if the terminal was in an area that covered multiple beams and the terminal locked onto the outroute in an adjacent beam. The polarization of the ODU should be verified to ensure that it matches the polarity for the beam selected during installation.

State Code	11.2.4
State Code Text	Outroute has lost lock due to excessive LNB frequency drift
Severity	Error
Description	The outroute was locked but then unlocked due to an excessive drift in the LNB.
Troubleshooting Steps	This typically points to an out-of-spec LNB (part of the ODU). There is a frequency offset in the LNB that can move (translate) the outroute carrier. If the frequency offset is too large, the outroute can become unlocked. A truckroll should be issued.

State Code	11.2.5
State Code Text	Outroute has lost lock
Severity	Error
Description	The outroute was locked but has now lost lock.
Troubleshooting Steps	This state code indicates that the terminal was able to lock the outroute as some point since the terminal has been powered on. Assuming no severe weather conditions at the terminal or Gateway locations and no Gateway issues (e.g. SatGW down), then this problem typically points to an installation issue at the terminal site. Consult SDT if possible and truckroll if a terminal reboot does not resolve.

3.2.3 FLL

State Code	11.3.1
State Code Text	FLL is not locked
Severity	Error
Description	The FLL algorithm is currently not in a locked state. The FLL is required for terminal transmission.
Troubleshooting Steps	This is typically a transitory state after the outroute has locked. The FLL will

	<p>typically take 8 to 15 seconds to lock after the outroute has locked.</p> <p>If the FLL does not lock within 15 seconds, and the terminal <i>is not</i> experiencing outroute acquisition problems, then reboot the terminal. If the problem persists after a reboot, then escalate. The IDU may need to be replaced.</p>
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3.2.4 ACM

State Code	11.4.1
State Code Text	ACM is not enabled or trajectory table is missing
Severity	Marginal
Description	The terminal does not have an ACM trajectory table configuration.
Troubleshooting Steps	<p>This may be a transitory state during the installation process before the terminal has received all of its configuration.</p> <p>If this problem exists after installation, re-commissioning the terminal or forcing an SDL reconcile may resolve the problem.</p>

State Code	11.4.2
State Code Text	ACM is operating at the lowest Modcod
Severity	Marginal
Description	The terminal is operating at the lowest Modcod in the trajectory table.
Troubleshooting Steps	<p>Under severe weather conditions, this is not an issue.</p> <p>If the problem is occurring under clear sky conditions, the signal quality should be evaluated as the terminal should only operate at the lowest Modcod under poor signal quality conditions.</p>

3.3 Uplink State Codes

The Uplink state codes indicate any issues or warnings in the Uplink (inroute) functionality of the terminal.

All Uplink state codes start with **12**.

There are four (4) functional areas monitored in the Uplink:

- *Transmit* – Fundamental transmit capability. Functional code is 1
- *Downlink* – Monitors outroute and FLL lock. Functional code is 2
- *Timing* – Timing synchronization. Functional code is 3
- *Group Selection* – Inroute Group monitoring and selection. Functional code is 4
- *Rate Selection* - Transmit rate selection, including AIS algorithm. Functional code is 5
- *Bandwidth* – Monitors and processes Bandwidth Allocation Packets (BAP). Functional code is 6
- *Aloha* – Aloha selection and transmission. Functional code is 7
- *Ranging* – Ranging algorithm to baseline power settings at each rate. Functional code is 8
- *CLPC* – Closed Loop Power Control algorithm. Functional code is 9.

3.3.1 Transmit

State Code	12.1.1
State Code Text	Uplink firmware failed to load
Severity	Error
Description	In order to transmit, the Uplink kernel module and the Nitro FPGA firmware need to load successfully. This state code indicates that one or both modules did not load successfully.
Troubleshooting Steps	<p>This may occur due to a corrupted software image or a corrupted flash chip on the terminal.</p> <ol style="list-style-type: none">1. Determine if the terminal is running the main or fallback image. If running the main image, force the terminal back to the fallback image [Note: need to discuss how this can be done by the end user]2. After terminals go back to fallback image, determine if problem persists. If so, RMA the terminal.3. If already running fallback, try rebooting the terminal. If problem persists, RMA the terminal.

State Code	12.1.2
State Code Text	Transmission is barred
Severity	Error
Description	The Network Management System (NMS) has barred the terminal from transmitting.

Troubleshooting Steps	This terminal is in the Barred Terminal Management System Information message. It should be determined why this terminal is in the list before removing from the list.
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State Code	12.1.3
State Code Text	Antenna pointing has not been validated
Severity	Error
Description	The terminal has not completed the antenna pointing validation process that occurs as installation time.
Troubleshooting Steps	This state should only occur when the installer is installing the antenna and has not yet completed the pointing validation test or the pointing validation test has failed. [Do we need a way to override this from the NMS or other management system?]

State Code	12.1.4
State Code Text	Transmission test in progress
Severity	Marginal
Description	The terminal is currently executing a transmission test. This is initiated by the NMS to measure transmit characteristics.
Troubleshooting Steps	This state should only occur if someone at the NMS has initiated a transmit test for the terminal. <i>Escalate to determine why the terminal is under test?</i>

State Code	12.1.5
State Code Text	Transmission TFIX (test mode) in progress
Severity	Marginal
Description	The terminal is currently executing a TFIX transmission test. This should never occur in operational mode.
Troubleshooting Steps	This state should only occur for internal development and test scenarios. Forcing to the fallback image may correct, but this should likely be escalated if it is ever observed.

3.3.2 Downlink

State Code	12.2.1
State Code Text	Outroute is not locked
Severity	Error
Description	In order to transmit, the outroute needs to be locked. In this state, the outroute is not locked.
Troubleshooting Steps	This should not be the system state code, as a lower state code (e.g. the Downlink 11.x.x) should be set. Troubleshoot according to the system state code.

State Code	12.2.2
State Code Text	FLL is not locked
Severity	Error
Description	In order to transmit, the Frequency Locked Loop (FLL) needs to be locked. In this state, the FLL is not locked.
Troubleshooting Steps	This should not be the system state code, as the Downlink state code 11.3.1 should be set as the system state code. Troubleshoot according to the system state code.

3.3.3 Timing

State Code	12.3.1
State Code Text	Not receiving timing packets
Severity	Error
Description	The terminal is not receiving SuperFrame Numbering Packets (SFNP) timing packets. The SFNP packets provide timing synchronization information to the terminals.
Troubleshooting Steps	<p>This typically occurs if the Timing Synchronization Application (TSA) is not running at the Gateway. A few things to check include:</p> <ol style="list-style-type: none"> 1. Verify that the outroute SQF is adequate. An SQF in the 30s may result in timing packets being lost. 2. If the SQF is adequate, determine if the terminal is receiving any control messages. Home→System Status→WAN Info→Control Packets Received 3. If the terminal is not receiving any control packets, then this may be a Gateway issue or a local terminal outroute issue. Try rebooting the terminal to see if the problem persists. 4. If the terminal is receiving some control messages, then the Uplink→Control Msgs→Messages link on the Advanced LUI can be examined to determine if only SFNP packet are not being received. If SFNP messages are not received, but other messages (e.g. IGDP, BAP) are, then should escalate to determine if TSA is running.

State Code	12.3.2
State Code Text	Invalid timing packet information
Severity	Error
Description	The terminal is receiving SuperFrame Numbering Packets (SFNP) timing packets, but the information in the packet is deemed incorrect.
Troubleshooting Steps	This typically points to a TSA issue at the Gateway. The Uplink→Timing→SFNP Info or Uplink→Timing→SFNP History links on the Advanced LUI could be analyzed to determine which field is wrong. Recommend escalation.

State Code	12.3.3
State Code Text	Clock synchronization error
Severity	Error
Description	The HT1000 terminal has two (2) clock circuits that need to be synchronized in order to establish timing synchronization. If these clocks are not in sync, the terminal will not transmit.
Troubleshooting Steps	This may occur under very low outroute signal quality conditions (e.g. low 30s) where one of the clocks circuits may reset. If the SQF is very low, then check for truck roll needed or if weather condition, wait until weather passes. If the outroute signal strength is good and this problem is persistent, then escalate. An RMA of the terminal may be needed.

State Code	12.3.4
State Code Text	Timing adjustment needed
Severity	Error/Marginal
Description	Occasionally the terminal needs to make large timing adjustments under which it should not transmit. This typically only is required when the terminal is first powered on.
Troubleshooting Steps	If this problem occurs outside of the terminal startup, then this problem should be monitored/trended to see if it is localized to a single terminal. Outroute and/or Gateway wide occurrence of this state code may point to a TSA issue. If this is localized to a single terminal, then try rebooting the terminal. If the problem persists, escalate.

3.3.4 Group Selection

State Code	12.4.1
State Code Text	Not receiving inroute group definition packets.
Severity	Error
Description	The terminal is not receiving Inroute Group Definition Packets (IGDP). The IGDP packets provide inroute information to the terminals.
Troubleshooting Steps	This typically occurs if the Inroute Group Manager (IGM) is not running at the Gateway or if the IGM is unable to synchronize with the TSA. A few things to check include: <ol style="list-style-type: none"> 1. Verify that the outroute SQF is adequate. An SQF in the 30s may result in IGDPs being lost. 2. If the SQF is adequate, determine if the terminal is receiving any control messages. Home → System Status → WAN Info → Control Packets Received 3. If the terminal is not receiving any control packets, then this may be a Gateway issue or a local terminal outroute issue. Try rebooting the

	<p>terminal to see if the problem persists.</p> <p>4. If the terminal is receiving some control messages, then the Uplink→Control Msgs→Messages link on the Advanced LUI can be examined to determine if IGDP packets are not being received. If IGDP messages are not received, but TSA messages are, then should escalate to determine if IGM is running.</p>
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State Code	12.4.2
State Code Text	Unable to select a valid inroute group
Severity	Error
Description	The terminal was not able to select an inroute group for some reason.
Troubleshooting Steps	<p>This state code is a generic ‘catch all’ state code that is set if the terminal was not able to select an inroute group for one of the other defined reasons (See subsequent state codes in the Group Selection function).</p> <p>Re-ranging the terminal may get it out of this state. If not, then try rebooting the terminal. If the problems persists, escalate.</p>

State Code	12.4.3
State Code Text	No transmit frequencies defined
Severity	Error
Description	The terminal was not able to select an inroute group because all advertised inroute groups do not have inroutes associated with them
Troubleshooting Steps	Hopefully this state code will never appear. This is a severe configuration error at the NMS/Gateway where the inroute groups do not have any inroute frequencies associated. Need to escalate.

State Code	12.4.4
State Code Text	Unable to select inroute group due to no Bootstrap Aloha metric
Severity	Error
Description	The terminal needs to transmit a Bootstrap Aloha burst, but not inroute groups at the selected rate are providing Bootstrap Aloha bursts.
Troubleshooting Steps	This is a configuration issue at the NMS/IGM. Note down the current rate the terminal is operating at and escalate.

State Code	12.4.5
State Code Text	Unable to select inroute group due to no Ranging metric
Severity	Error
Description	The terminal needs to range, but not inroute groups at the selected rate are providing ranging bandwidth.
Troubleshooting Steps	This is a configuration issue at the NMS/IGM. Note down the current rate the terminal is operating at and escalate.

State Code	12.4.6
State Code Text	Unable to select inroute group due to no User Load metric
Severity	Error
Description	The terminal needs to go active to transmit, but there is no bandwidth available on any inroute group at the current rate.
Troubleshooting Steps	This state may occur under very heavy load on the inroute, decreased capacity (e.g. an IGM has gone down), or under-provisioning at a particular symbol rate. If this is not a temporary condition, then should escalate.

3.3.5 Rate Selection

State Code	12.5.1
State Code Text	Failed to successfully range any rate
Severity	Error
Description	The terminal has failed to successfully range at any rate in the network, including the most robust rate of 512k ½.
Troubleshooting Steps	<p>This state code indicates that the terminal was not able to meet the minimum Es/No any rate in the system, including the most robust rate. Ranging typically only occurs at installation time and the installer should not leave the site if the terminal is in this state code.</p> <p>Re-ranging the terminal may resolve this problem. It may take repeated re-ranging attempts if the terminal is near the minimum threshold. A truck roll may be required to resolve this issue.</p>

State Code	12.5.2
State Code Text	Failed to successfully range all available rates
Severity	Error
Description	The terminal has failed to successfully range at any rate in the AIS Trajectory Table.
Troubleshooting Steps	<p>This state code will typically not occur as all AIS Trajectory Tables should include the most robust rate (512k ½).</p> <p>Re-ranging the terminal may resolve this problem. It may take repeated re-ranging attempts if the terminal is near the minimum threshold. A truck roll may be required to resolve this issue.</p>

State Code	12.5.3
State Code Text	No inroute groups available at successfully ranged rates
Severity	Error
Description	The terminal has successfully ranged some rates, but there are no inroute groups available that support these rates.
Troubleshooting Steps	<p>This state code will typically not occur as inroute groups should be available at all symbol rates.</p> <p>Re-ranging the terminal may resolve this problem.</p>

	This may need to be escalated if there are symbol rates that have not inroute groups available.
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State Code	12.5.4
State Code Text	Adaptive Inroute Selection (AIS) is not enabled
Severity	Marginal
Description	The terminal is operational, but the AIS feature is not enabled.
Troubleshooting Steps	<p>The AIS feature allows the terminal to adjust its transmit power and rate selection based on outroute fade and transmit power feedback messages.</p> <p>This state code indicates that the feature is not enabled. The AIS feature should be enabled after the terminal registers. Re-Registering the terminal should get the proper configuration to the terminal.</p>

State Code	12.5.5
State Code Text	Lowest Symcod in the AIS Trajectory Table selected
Severity	Marginal
Description	The terminal is operational, but is operating at the lowest Symcod (Symbol and Coding rate)
Troubleshooting Steps	<p>The AIS feature allows the terminal to adjust its transmit power and rate selection based on outroute fade and transmit power feedback messages.</p> <p>This state code indicates that the terminal is operating at the most robust rate (512k ½) in the AIS trajectory table. This may impact the upload throughput of the terminal. This state would be expected if the terminal was experiencing weather conditions.</p> <p>If there are no weather conditions at the terminal or associated Gateway, then re-ranging the terminal may resolve this state. If the state persists, then a truck roll may be warranted.</p>

3.3.6 Bandwidth

State Code	12.6.1
State Code Text	Not receiving bandwidth allocation packets
Severity	Error
Description	The terminal is not receiving Bandwidth Allocation Packets (BAP). The BAP packets provide inroute bandwidth information to the terminals.
Troubleshooting Steps	<p>This state code will typically not be seen, as the 12.4.1 state code (No receiving inroute group definitions packets) will be displayed if the IGM is not running. A few things to check include:</p> <ol style="list-style-type: none"> 1. Verify that the outroute SQF is adequate. An SQF in the 30s may result in BAPs being lost.

	<ol style="list-style-type: none"> 2. If the SQF is adequate, determine if the terminal is receiving any control messages. Home→System Status→WAN Info→Control Packets Received 3. If the terminal is not receiving any control packets, then this may be a Gateway issue or a local terminal outroute issue. Try rebooting the terminal to see if the problem persists. 4. If the terminal is receiving some control messages, then the Uplink→Control Msgs→Messages link on the Advanced LUI can be examined to determine if BAP packets are not being received. If BAP messages are not received, but TSA messages and IGDP messages are, then should escalate to determine if there is an IGM problem.
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State Code	12.6.2
State Code Text	No bandwidth allocation information available
Severity	Error
Description	The terminal is receiving Bandwidth Allocation Packets (BAP), but the BAPs are arriving too late or too early to be used.
Troubleshooting Steps	<p>This state code is typically transient if observed at all. If this state code is persistent, then there are two likely causes:</p> <ol style="list-style-type: none"> 1. If this is just occurring on one terminal, the frame number synchronization between the terminal and Gateway is off. Rebooting the terminal should resolve the issue. 2. If there is a trend across numerous terminals on a beam, then there is likely a frame number synchronization at the Gateway between the IGM and TSA components – need to escalate.

State Code	12.6.3
State Code Text	No Aloha allocation information available
Severity	Error
Description	The terminal is receiving Bandwidth Allocation Packets (BAP), but there are no Aloha allocations in the BAP.
Troubleshooting Steps	This is an IGM configuration issue. Note that current inroute group and escalate.

State Code	12.6.4
State Code Text	No Bootstrap Aloha allocation information available
Severity	Error
Description	The terminal is receiving Bandwidth Allocation Packets (BAP), but there are no Bootstrap Aloha allocations in the BAP.
Troubleshooting Steps	This is an IGM configuration issue. Note that current inroute group and escalate.

3.3.7 Aloha

State Code	12.7.1
State Code Text	Aloha transmission is unsuccessful
Severity	Error/Marginal
Description	The terminal is transmitting a (small aperture) Aloha burst, but is not receiving an acknowledgement from the Gateway that the Aloha burst was received.
Troubleshooting Steps	<p>This state code is difficult to troubleshoot. In the HN (Ku) system, this state code was known as ‘Tx Code 10’. If the Site Diagnostic Tool does not indicate that a truck roll is needed, then the following troubleshooting steps can be tried:</p> <ol style="list-style-type: none"> 1. If this problem is due to a timing issue, the problem may resolve itself within a few (e.g. 5) minutes as the terminal will try a Bootstrap Aloha transmission after some configurable number of (small aperture) Aloha transmissions. 2. If the problem is due to a power control or attenuation issue, then re-ranging the terminal may resolve the problem. The ranging process established the correct power setting/attenuation for each rate 3. Note the inroute group the terminal is on and see if there is a trend in 12.7.1 problems. Overloading of the Aloha bursts may cause this problem. <p>If the problem persists, escalate. A truck-roll may be required. <i>[Ideally, we would have the terminal transmit a CW test carrier to determine if the terminal is able to successfully transmit at all]</i></p>

State Code	12.7.2
State Code Text	Bootstrap Aloha transmission is unsuccessful
Severity	Error/Marginal
Description	The terminal is transmitting a (large aperture) Aloha burst, but is not receiving an acknowledgement from the Gateway that the Aloha burst was received.
Troubleshooting Steps	<p>This state code is difficult to troubleshoot. In the HN (Ku) system, this state code was known as ‘Tx Code 13’. This state code is essentially the same as 12.7.1; however, the terminal is attempting to transmit a Bootstrap Aloha burst which utilizes a larger aperture to alleviate potential timing issues.</p> <p>If the Site Diagnostic Tool does not indicate that a truck roll is needed, then the following troubleshooting steps can be tried:</p> <ol style="list-style-type: none"> 1. If this problem is due to a timing issue, one possible (but unlikely) issue is that the terminal latitude/longitude has not been entered correctly. <i>[What is the best way for a Tier 1 agent to verify that lat/long of the terminal?]</i> 2. If the problem is due to a power control or attenuation issue, then re-ranging the terminal may resolve the problem. The ranging process

	<p>established the correct power setting/attenuation for each rate</p> <p>3. Note the inroute group the terminal is on and see if there is a trend in 12.7.1 problems. Overloading of the Aloha bursts may cause this problem.</p> <p>If the problem persists, escalate. A truck-roll may be required. <i>[Ideally, we would have the terminal transmit a CW test carrier to determine if the terminal is able to successfully transmit at all]</i></p>
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3.3.8 Ranging

State Code	12.8.1
State Code Text	Requesting ranging
Severity	Marginal
Description	The terminal is requesting a ranging session from the Gateway.
Troubleshooting Steps	<p>A terminal ranges when it is first installed and potentially at other times to re-baseline its power settings. The ranging process should only take about one (1) minute for each rate that is ranged.</p> <p>If the terminal seems to be stuck in the 12.8.1 state, then rebooting the terminal may resolve the issue. <i>[May want to consult the Uplink →Ranging →Summary link on the Advanced LUI to see a summary of rates that have been ranged, determine if ranging is in progress, etc.]</i></p>

State Code	12.8.2
State Code Text	Computing ranging values
Severity	Marginal
Description	The terminal is currently executing the ranging process and computing the power setting values based on feedback from the Gateway.
Troubleshooting Steps	<p>A terminal ranges when it is first installed and potentially at other times to re-baseline its power settings. The ranging process should only take about one (1) minute for each rate that is ranged.</p> <p>If the terminal seems to be stuck in the 12.8.2 state, then rebooting the terminal may resolve the issue. <i>[May want to consult the Uplink →Ranging →Summary link on the Advanced LUI to see a summary of rates that have been ranged, determine if ranging is in progress, etc.]</i></p>

State Code	12.8.3
State Code Text	Sending ranging results
Severity	Marginal
Description	The terminal has completed ranging for this rate and is sent ranging results to the Gateway.
Troubleshooting Steps	A terminal ranges when it is first installed and potentially at other times to re-baseline its power settings. The ranging process should only take about one (1) minute for each rate that is ranged.

	If the terminal seems to be stuck in the 12.8.3 state, then rebooting the terminal may resolve the issue. [<i>May want to consult the Uplink → Ranging → Summary link on the Advanced LUI to see a summary of rates that have been ranged, determine if ranging is in progress, etc.</i>]
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3.3.9 CLPC (Closed Loop Power Control)

State Code	12.9.1
State Code Text	Not receiving inroute power feedback packets
Severity	Error
Description	The terminal is not receiving Inroute Power Feedback Packets (IPFP). The IPFP packets provide inroute Es/No power information to the terminals. They are also used to determine Stream ACK/NAK counts.
Troubleshooting Steps	<p>This state code will typically not be seen, as the 12.4.1 state code (No receiving inroute group definitions packets) will be displayed if the IGM is not running. A few things to check include:</p> <ol style="list-style-type: none"> 1. Verify that the outroute SQF is adequate. An SQF in the 30s may result in IPFPs being lost. 2. If the SQF is adequate, determine if the terminal is receiving any control messages. Home → System Status → WAN Info → Control Packets Received 3. If the terminal is not receiving any control packets, then this may be a Gateway issue or a local terminal outroute issue. Try rebooting the terminal to see if the problem persists. 4. If the terminal is receiving some control messages, then the Uplink → Control Msgs → Messages link on the Advanced LUI can be examined to determine if IPFP packets are not being received. If IPFP messages are not received, but TSA messages and IGDP messages are, then should escalate to determine if there is an IGM problem.

3.4 LAN State Codes

The LAN state codes indicate any issues or warnings with the LAN functionality of the terminal.

All LAN state codes start with **13**.

There is one (1) functional area monitored for the LAN:

- *LAN Cable* – LAN cable connectivity to the terminal. Functional code is 1

3.4.1 LAN Cable

<i>State Code</i>	13.1.1
<i>State Code Text</i>	LAN cable is not attached
<i>Severity</i>	Error
<i>Description</i>	The terminal has not detected a LAN cable connected to the LAN port on the back of the terminal.
<i>Troubleshooting Steps</i>	<p>Verify that a LAN cable on one end is connected to the LAN port on the back of the terminal <i>and</i> to on the other end to either a computer or router.</p> <p>If the problem persists, try connecting to a different computer and/or router.</p> <p>If the problem still persists, the terminal may need to be replaced.</p>

3.5 SYSINFO State codes

State Code	20.1.1
State Code Text	Not receiving Management Router Advertisement (MRA) messages
Severity	Marginal / Error
Description	<p>The reason for not receiving this message are</p> <ul style="list-style-type: none"> • Management IPGW (s) is/are not operational. • Terminal Out route not receiving multicast messages <ul style="list-style-type: none"> ○ Satellite gateway configuration issues. <p>Management Router advertisement system information message is sent periodically from the Management IPGW. This message contains the WAN & MGMT plane IPv6 prefix information. If this message is not received at all [since the terminal startup] then the terminal will wait for this message before proceeding to setup any L3/L4 functions. If the terminal has received the MRA in the past but is not currently receiving then the terminal will continue to use the IPv6 prefix information from the previously received message. If the message is not received because of problem with management IPGW, management plane messages [i.e. SDL, SBC etc.] may not reach the intended server/host at the Gateway. The data plane might still work normally if the terminal has associated (previously) with a data IPGW.</p>
Troubleshooting Steps	<p>This state code will typically be seen when</p> <ol style="list-style-type: none"> 1. Terminal Out route is not operational (i.e.) SQF is not adequate [<i>consult the Downlink->Summary on the advanced LUI to diagnose the Downlink issues: in this case this state code will be in shown as main cause of the terminal</i>]. 2. If the outroute is operational, then check if the terminal is not receiving any data packets. Home→System Status→WAN Info→Data Packets Received 3. If the terminal is not receiving any data packets, then this may be a Gateway issue or a local terminal outroute issue. Try rebooting the terminal to see if the problem persists. <p>If the terminal is receiving some data packets, then the Downlink→Mac Stats link on the Advanced LUI can be examined to determine if Broadcast packets are not being received. If Broadcast packets are received, then should escalate to determine if there is a Management Gateway problem.</p>

State Code	20.1.2
State Code Text	Not receiving Management System (MS) Information messages
Severity	Marginal
Description	<p>The reason for not receiving this message are</p> <ul style="list-style-type: none"> • SDL server(s) is/are not operational • Management IPGW (s) is/are not operational. • Terminal Out route not receiving multicast messages

	<ul style="list-style-type: none"> ○ Satellite gateway configuration issues. ● Routing issues between SDL server and the Management IPGW <p>Management Services system information message is sent periodically from the SDL server at the gateway. This message contains the address and status information of SDL Server, & Statistics Server. If this message is not received, the terminal might still be fully operation (as far as the data plane operations are concerned), but the SDL or the statistics upload operations will not be functional.</p>
Troubleshooting Steps	<p>This state code will typically be seen when</p> <ol style="list-style-type: none"> 1. Terminal Out route is not operational (i.e.) SQF is not adequate [<i>consult the Downlink->Summary on the advanced LUI to diagnose the Downlink issues: in this case this state code will be in shown as main cause of the terminal</i>]. 2. If the outroute is operational, then check if the terminal is not receiving any data packets. Home→System Status→WAN Info→Data Packets Received 3. If the terminal is not receiving any data packets, then this may be a Gateway issue or a local terminal outroute issue. Try rebooting the terminal to see if the problem persists. <p>If the terminal is receiving some data packets, then the Downlink→Mac Stats link on the Advanced LUI can be examined to determine if Broadcast packets are not being received. If Broadcast packets are received, then should escalate to determine if there is a Management Gateway or SDL server problem.</p>

3.6 ASSOCIATION State Codes

State Code	22.1.1
State Code Text	System Assigned Identifier (SAI) is not available
Severity	Marginal / Error
Description	Association can't occur until the terminal has registered and received a System Assigned Identifier (SAI).
Troubleshooting Steps	Complete registration of the terminal.

State Code	21.1.2
State Code Text	Not receiving Management Router Advertisement (MRA) messages
Severity	Error
Description	<p>The reason for not receiving this message are</p> <ul style="list-style-type: none"> • Management IPGW (s) is/are not operational. • Terminal Out route not receiving multicast messages <ul style="list-style-type: none"> ○ Satellite gateway configuration issues. <p>Management Router advertisement system information message is sent periodically from the Management IPGW. This message contains the WAN & MGMT plane IPv6 prefix information. If this message is not received the terminal cannot associate with IPGW. [Refer to 20.1.1].</p>
Troubleshooting Steps	<p>This state code will typically be seen when</p> <ol style="list-style-type: none"> 1. Terminal Out route is not operational (i.e.) SQF is not adequate [<i>consult the Downlink->Summary on the advance LUI to diagnose the Downlink issues: in this case this state code will be in shown as main cause of the terminal</i>]. 2. If the outroute is operational, then check if the terminal is not receiving any data packets. Home→System Status→WAN Info→Data Packets Received 3. If the terminal is not receiving any data packets, then this may be a Gateway issue or a local terminal outroute issue. Try rebooting the terminal to see if the problem persists. <p>If the terminal is receiving some data packets, then the Downlink→Mac Stats link on the Advanced LUI can be examined to determine if Broadcast packets are not being received. If Broadcast packets are received, then should escalate to determine if there is a Management Gateway problem.</p>

State Code	21.1.3
State Code Text	All Association requests rejected, entering Backoff State.
Severity	Error
Description	<p>Reason for the terminal getting into this state is:</p> <ul style="list-style-type: none"> • all IPGWs in the IPGW pool are maximally loaded <p>The terminal enters the back-off period due to being rejected by all IPGWs in the IPGW pool due to a transitory reject reason. In order to reduce the amount of traffic from terminals that are being rejected, the terminal goes into this longer back-off period before attempting to re-associate. The terminal stays in this back-off state until the expiry of the back-off timer. At that time, the</p>

	terminal transitions back into the Selecting IPGW state and attempts to associate with IPGWs in the pool.
Troubleshooting Steps	This state code will typically be seen when all the IPGWs in the IPGW pool are heavily loaded, should escalate this problem to determine the reason for the heavy IPGW load.

State Code	21.1.4
State Code Text	Creating Data IPGW Pool
Severity	Marginal
Description	<p>This is the initial state in which a terminal starts (e.g., after reboot). The terminal can also enter this state for one of the following reasons:</p> <ul style="list-style-type: none"> • the terminal returns after an outage of the outroute or outroute stream either due to a long lasting transmission impairment or a Gateway component failure that is not quickly recovered • the pool size of IPGWs against which the terminal matches goes to the empty set • the configuration of the terminal changes with respect to one of the matching parameters in which case the terminal must determine a new pool using different matching criteria.
Troubleshooting Steps	<p>This state code will not be typically seen as it is a transitory state code. If the terminal persists in this state code for a long period of time, few things to check:</p> <ol style="list-style-type: none"> 1. Terminal Out route is not operational (i.e.) SQF is not adequate [<i>consult the Downlink->Summary on the advanced LUI to diagnose the Downlink issues: in this case this state code will be in shown as main cause of the terminal</i>]. 2. If the outroute is operational, then check if the terminal is not receiving any data packets. Home→System Status→WAN Info→Data Packets Received 3. If the terminal is not receiving any data packets, then this may be a Gateway issue or a local terminal outroute issue. Try rebooting the terminal to see if the problem persists. 4. If the terminal is receiving some data packets, then the Downlink→Mac Stats link on the Advanced LUI can be examined to determine if Broadcast packets are not being received. If Broadcast packets are received, then should escalate to determine if there is a data IPGW problem.

State Code	21.1.5
State Code Text	Associating with Data IPGW
Severity	Marginal
Description	<p>Once the terminal has selected a candidate Data IPGW and sent an Association Request, the terminal awaits a response in the Associating state. The terminal enters the Associating state from the Selecting IPGW state. The terminal leaves the Associating state upon</p> <ul style="list-style-type: none"> • Receiving an Association Accept upon which it transitions to the

	<p>Terminal Associated state</p> <ul style="list-style-type: none"> • Receiving an Association Reject or timing out after no response to multiple Association Requests upon which it transitions to Selecting IPGW state • Having attempted all IPGWs in the Pool and not receiving an Association Accept upon which the terminal enters the Backoff state.
Troubleshooting Steps	<p>This state code will not be typically seen as it is a transitory state code. If the terminal persists in this state code for a long period of time, few things to check:</p> <ol style="list-style-type: none"> 1. Terminal Inroute is not operational. <i>consult the Uplink->Summary on the advance LUI to diagnose the uplink issues: in this case this state code will be in shown as main cause of the terminal].</i> 2. If the inroute is operational, then check if the terminal is not sending any data packets. Home→System Status→WAN Info→ Packets transmitted. 3. If the terminal is not sending any data packets, then this may be a local terminal inroute issue. Try rebooting the terminal to see if the problem persists. <p>If the terminal is sending some data packets, should escalate to determine if there is a data IPGW / IGM problem.</p>

State Code	21.2.1
State Code Text	Creating Wall Garden IPGW Pool
Severity	Marginal
Description	<p>Terminal starts creating Wall Garden IPGW pool under following conditions:</p> <ul style="list-style-type: none"> • If the terminal is rejected by more than one Data IPGW with a fundamental reject code, it starts creating Wall Garden IPGW pool where it can access customer care pages and basic services until the problem can be corrected. The Fundamental reject reasons are <ul style="list-style-type: none"> ○ Rejection due to signature mismatch ○ Rejection due to not supported service parameters ○ Rejection due to suspended state mismatch • During terminal registration process (before activation). • If the terminal has been rejected (transitory) by all Data IPGWs in the pool (e.g., due to abnormally high loading), the terminal enters the Backoff state more than once. The transitory rejection reasons are: <ul style="list-style-type: none"> ○ Reject due to candidate IPGW changing to a non-active state ○ Reject due to loading of candidate IPGW ○ Reject due to running out of IP Subnets to allocate to the terminal.
Troubleshooting Steps	<p>This state code will not be typically seen as it is a transitory state code. If the terminal persists in this state code for a long period of time, few things to check:</p> <ol style="list-style-type: none"> 1. Terminal Out route is not operational (i.e.) SQF is not adequate [<i>consult the Downlink->Summary on the advanced LUI to diagnose the Downlink issues: in this case this state code will be in shown as main cause of the terminal].</i>

	<ol style="list-style-type: none"> 2. If the outroute is operational, then check if the terminal is not receiving any data packets. Home→System Status→WAN Info→Data Packets Received 3. If the terminal is not receiving any data packets, then this may be a Gateway issue or a local terminal outroute issue. Try rebooting the terminal to see if the problem persists. <p>If the terminal is receiving some data packets, then the Downlink→Mac Stats link on the Advanced LUI can be examined to determine if Broadcast packets are not being received. If Broadcast packets are received, then should escalate to determine if there is a data IPGW problem.</p>
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State Code	21.2.2
State Code Text	Associating with Wall Garden IPGW
Severity	Marginal
Description	<p>Once the terminal has selected a candidate Wall Garden IPGW and sent an Association Request, the terminal awaits a response in the Associating state. The terminal enters the Associating state from the Selecting IPGW state. The terminal leaves the Associating state upon</p> <ul style="list-style-type: none"> • Receiving an Association Accept upon which it transitions to the Terminal Associated state • Receiving an Association Reject or timing out after no response to multiple Association Requests upon which it transitions to Selecting IPGW state.
Troubleshooting Steps	<p>This state code will not be typically seen as it is a transitory state code. If the terminal persists in this state code for a long period of time, few things to check:</p> <ol style="list-style-type: none"> 1. Terminal Inroute is not operational. <i>consult the Uplink->Summary on the advance LUI to diagnose the uplink issues: in this case this state code will be in shown as main cause of the terminal</i>]. 2. If the inroute is operational, then check if the terminal is not sending any data packets. Home→System Status→WAN Info→ Packets transmitted. 3. If the terminal is not sending any data packets, then this may be a local terminal inroute issue. Try rebooting the terminal to see if the problem persists. <p>If the terminal is sending some data packets, should escalate to determine if there is a data IPGW / IGM problem.</p>

State Code	21.2.3
State Code Text	Associated with Walled Garden IPGW for an Unknown Reason.
Severity	Marginal
Description	The terminal has associated with the Wall Garden for an unknown reason.
Troubleshooting Steps	This state code should not occur. Escalate if observed.

State Code	21.2.4
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State Code Text	Associated with Wall Garden IPGW for Terminal Activation.
Severity	Marginal
Description	<p>The terminal has associated with the Wall Garden while waiting for the terminal activation (after successful registration).</p> <p>The installer explicitly requests Terminal service activation or re-activation by clicking on the Terminal Service activation link on the Terminal Web UI.</p> <p>The installer enters the SAN and PIN on the BSS screen based upon the copy of the work order provided to the installer and BSS validates these values. The SAN is used to associate the given terminal hardware identified by its ESN with the customer's account and billing information already be provided as part of their original service order creation. The PIN acts as a password for service orders to ensure authorization to perform the given service order installation and Terminal service activation</p>
Troubleshooting Steps	This state code is typically seen during the terminal activation after associating with the wall garden IPGW during registration & activation phase of the terminal.

State Code	21.2.5
State Code Text	Associated with Wall Garden IPGW for Service Activation.
Severity	Marginal
Description	<p>The terminal has associated with the Wall Garden while waiting for the customer service activation (after successful installer activation).</p> <p>The Customer Service activation steps beyond activating the Terminal service includes activating e-mail services, presenting the customer with the Terms and Conditions of the service, and offering to up-sell the customer on various value-added services.</p>
Troubleshooting Steps	This state code is typically seen during the terminal activation after associating with the wall garden IPGW during registration & activation phase of the terminal. This is state code is displayed after the terminal activation, but before the service activation.

State Code	21.2.6
State Code Text	Associated with Wall Garden IPGW due to Empty Data IPGW pool.
Severity	Marginal
Description	<p>This situation can happen because :</p> <ul style="list-style-type: none"> • All suitable DATA IPGWs are inactive • All suitable DATA IPGWs are overloaded. • The terminals Service profile does not match with any of the active Data IPGW <p>The terminal will automatically revert back to the Data IPGW as when a suitable DATA IPGW is available.</p>
Troubleshooting Steps	This state code is typically seen when an activated terminal is associated with a Wall Garden IPGW because of unavailability of Data IPGW to associate with.

	Should escalate to determine if there is a gateway problem.
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State Code	21.2.7
State Code Text	Associated with Wall Garden IPGW due to Signature mismatch.
Severity	Marginal
Description	<p>The terminal has associated with the Wall Garden because of signature mismatch of its Service Parameter Information with the DATA IPGW</p> <p>To prevent a security loophole where the information could be modified, the terminal Service Parameter Information is protected from tampering by requiring the terminal to provide a <i>signature</i> along with the Service Information to the IPGW. This signature is a hash of the Service Parameter Information, the terminal's device ID and is provided to the terminal along with the Service Parameter Information. The cryptographic key used to compute the signature itself is not configured at the terminal; the signature is computed by the NOC and passed to the terminal. Each IPGW that can receive an Association message is configured with the cryptographic key that it uses to compute a signature from the Service Parameter Information received from a terminal and compare it with the signature supplied by the terminal. If the two do not match, IPGW rejects the association request from the terminal.</p>
Troubleshooting Steps	<p>This state code is typically seen when an activated terminal is associated with a Wall Garden IPGW because of service signature mismatch, few things to check.</p> <ol style="list-style-type: none"> 1. This might be the result of the inconsistency in the service configuration between the terminal and Data IPGWs. 2. Unauthorized modification of service parameter. <p>Should escalate to determine if there is a gateway problem, or unauthorized tampering of the service parameter.</p>

State Code	21.2.8
State Code Text	Associated with Wall Garden IPGW due to Data IPGW Loading
Severity	Marginal
Description	<p>The terminal has associated with the Wall Garden because the all data IPGWs rejected association requests due IPGWs exceeding the threshold load condition (DATA IPGW overload)</p>
Troubleshooting Steps	<p>This state code will typically be seen when all the IPGWs in the IPGW pool are heavily loaded, should escalate this problem to determine the reason for the heavy IPGW load.</p>

State Code	21.2.9
State Code Text	Associated with Wall Garden IPGW due to Service Mismatch
Severity	Marginal
Description	The terminal associated with the Wall Garden because it is rejected by all the DATA IPGWs. This situation can happen because the terminal is not configured with appropriate mandatory service parameters for associating with Data IPGW. This situation can only be resolved by re-configuring the terminal with the required Service parameters
Troubleshooting Steps	This state code is typically seen when an activated terminal is associated with a Wall Garden IPGW because of service code mismatch. This might be the result of the inconsistency in the service configuration between the terminal and Data IPGWs. This situation can only be resolved by re-configuring the terminal with the required Service parameters.

State Code	21.2.10
State Code Text	Associated with Wall Garden IPGW due to connectivity failure.
Severity	Marginal
Description	This condition happens when the terminal is not able to associate with any of the candidate data IPGW in its pool, due to association timeout. The most likely cause is the connectivity problem (uplink/downlink) between the terminal and Data IPGW(s).
Troubleshooting Steps	This state code is typically seen when an activated terminal is associated with a Wall Garden IPGW because of unavailability of data IPGW, should escalate this problem to determine the reason for the un-reachability data IPGW.

State Code	21.2.11
State Code Text	Associated with Wall Garden IPGW due to Billing suspension.
Severity	Marginal
Description	This condition happens when the customer has not paid his bills and the terminal operational state is configured to “Billing Suspension”.
Troubleshooting Steps	This state code is typically seen when an activated terminal is associated with a Wall Garden IPGW because of non-payment of service dues.

State Code	21.2.12
State Code Text	Associated with Wall Garden IPGW due to Seasonal suspension.
Severity	Marginal
Description	This condition happens when the terminal operational state is configured to “Seasonal Suspension”, most likely per customer request, when customer is not going to use the service for some time.
Troubleshooting Steps	This state code is typically seen when an activated terminal is associated with a Wall Garden IPGW because due to customer request for seasonal suspension.

<i>State Code</i>	21.2.13
<i>State Code Text</i>	Associated with Wall Garden IPGW due to Quality Assurance Test
<i>Severity</i>	Marginal
<i>Description</i>	This condition happens when the terminal operational state is configured to “Product Assurance Test”.
<i>Troubleshooting Steps</i>	This state code is typically seen on terminals configured for Product qualification test mode.

3.7 SBC State Codes

The SBC state codes indicate any issues during the installation and commissioning process as well as indicate progress.

All SBC state codes start with **22**.

There are three (3) functional areas in SBC:

- *Input* – Stage where input parameters (e.g. terminal location) are provided. Functional code is 1
- *Pointing* – Stage where antenna pointing occurs. Functional code is 2
- *Registration* – Stage where terminal ranges, registers, activates, and obtains configuration. Functional code is 3

3.7.1 Input

<i>State Code</i>	22.1.1
<i>State Code Text</i>	Waiting for installation parameters or terminal swap information
<i>Severity</i>	Marginal
<i>Description</i>	This is the initial state code that will be displayed when SBC is started. At this stage, the terminal is waiting for the installer to provide the terminal location (latitude / longitude). In the case of a swapped terminal, the terminal will wait to receive a swap information message over the outroute.
<i>Troubleshooting Steps</i>	For a new installation, enter the terminal location and choose a satellite. For swapped terminals, wait a few minutes to receive a swap information message.

<i>State Code</i>	22.1.2
<i>State Code Text</i>	SBC configuration file is invalid or not found
<i>Severity</i>	Error
<i>Description</i>	The SBC file is either not present on the terminal or is invalid/corrupt.
<i>Troubleshooting Steps</i>	If possible, upload the SBC file to the terminal. If not, replace with another IDU.

<i>State Code</i>	22.1.3
<i>State Code Text</i>	Hardware configuration file is invalid or not found
<i>Severity</i>	Error
<i>Description</i>	The hardware configuration file for the terminal, which is provided during manufacture, is either not present or is invalid/corrupt.
<i>Troubleshooting Steps</i>	Replace with another IDU and RMA the original IDU.

<i>State Code</i>	22.1.4
<i>State Code Text</i>	Unable to select beam based on provided terminal location
<i>Severity</i>	Error
<i>Description</i>	The beam selection algorithm was unable to select a beam based on the terminal location.
<i>Troubleshooting Steps</i>	Verify that terminal Latitude and Longitude values have been entered correctly. Also verify that the terminal location is within one of the Jupiter beams.

3.7.2 Pointing

State Code	22.2.1
State Code Text	Pointing In Progress – Outroute not locked
Severity	Marginal
Description	The terminal is in the Pointing stage of installation and the outroute is currently not locked.
Troubleshooting Steps	No issue as this is a normal state during the pointing stage.

State Code	22.2.2
State Code Text	Pointing In Progress – Outroute locked
Severity	Marginal
Description	The terminal is in the Pointing stage of installation and the outroute is currently locked.
Troubleshooting Steps	No issue as this is a normal state during the pointing stage.

State Code	22.2.3
State Code Text	Pointing In Progress – Outroute not locked and polarization change required
Severity	Error
Description	The terminal is in the Pointing stage of installation and the outroute is currently not locked because an ODU polarity change is required.
Troubleshooting Steps	<p>The preliminary beam selection algorithm selected a beam that is either not in an ‘Active’ state (may be under test) or there are no Active outroutes. To learn this information, the terminal had initially acquired the outroute and received a UBIP (User Beam Information Packet) message that provided the beam and outroute status. From the UBIP message, the terminal has automatically selected another beam that is Active and this beam is operating at a different polarity.</p> <p>To resolve the issue, the polarity of the ODU must be changed.</p>

State Code	22.2.4
State Code Text	Pointing In Progress – Outroute locked but not receiving UBIP messages
Severity	Error
Description	The terminal is in the Pointing stage of installation and the outroute is currently locked, but UBIP messages are not being received.
Troubleshooting Steps	The terminal has acquired the outroute, but UBIP messages are not being received by the terminal. UBIP messages must be received by the terminal during the installation process to inform the terminal of Beam and Outroute state. Escalate to determine if there is a problem at the Gateway where UBIP messages are not being sent.

State Code	22.2.5
State Code Text	Pointing In Progress – Outroute locked but UBIP does not indicate any available outroutes
Severity	Error
Description	The terminal is in the Pointing stage of installation and the outroute is currently locked, but the UBIP message indicates there are no beams or outroutes available.

Troubleshooting Steps	The terminal has acquired the outroute, but the UBIP message indicates that there are no beams or outroutes available for the given terminal location. Verify that the terminal location has been entered correctly. If the location is correct, then escalate to determine if there is an error in the UBIP message or if there really are no beams/outroutes available.
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3.7.3 Registration

State Code	22.3.1
State Code Text	Ranging In Progress
Severity	Marginal
Description	The terminal is ranging to establish proper transmit power settings
Troubleshooting Steps	None, as the ranging process is expected after antenna pointing has completed.

State Code	22.3.2
State Code Text	Registration In Progress
Severity	Marginal
Description	The terminal is registering with the Gateway/NMS.
Troubleshooting Steps	None, as the registration process is expected after the terminal ranges.

State Code	22.3.3
State Code Text	Waiting for Configuration
Severity	Marginal
Description	The terminal is waiting for final configuration.
Troubleshooting Steps	If the terminal is in this state for an extended period of time (e.g. more than 10 minutes) the installer may need to call in for assistance. Verify that Terminal Activation and Service Activation have been completed. May also want to monitor the SDL process to see if configuration is scheduled to be sent to the terminal.

State Code	22.3.10
State Code Text	Bad Downlink state
Severity	Error
Description	The downlink module is in an error state, most likely the outroute is not locked.
Troubleshooting Steps	This SBC state code should only appear once the pointing stage has complete and the terminal is attempting to register, activate, or obtain configuration. Most likely the outroute is no longer locked. Determine the current Downlink state code and troubleshoot according to the Downlink state code.

State Code	22.3.11
State Code Text	Unable to transmit successfully to the Gateway
Severity	Error
Description	The terminal is attempting to transmit a Bootstrap Aloha (large aperture) burst but is unsuccessful in all transmission attempts.

Troubleshooting Steps	This SBC state code should only appear during the Registration stage. Verify that the terminal location information has been entered correctly. Verify that the polarity setting is correct on the ODU. Assuming there are no known Gateway issues, replace the ODU if the problem persists.
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State Code	22.3.12
State Code Text	Failed to successfully range most robust rate
Severity	Error
Description	The terminal was unable to meet the minimum Es/No requirements for ranging at the most robust rate (which is typically 512 ½)
Troubleshooting Steps	This SBC state code should only appear during the Registration stage. Verify, via the outroute signal quality, that the antenna is still pointed well. Verify cable connections between the IDU and ODU. Force range the terminal again (Advanced LUI: Uplink→Ranging→Force Range). Replace the ODU if the problem persists.

State Code	22.3.13
State Code Text	Bad Uplink State
Severity	Error
Description	The Uplink module is in an error state.
Troubleshooting Steps	This SBC state code should only appear once the pointing stage has complete and the terminal is attempting to register, activate, or obtain configuration. Determine the current Uplink state code and troubleshoot according to the Uplink state code.

State Code	22.3.14
State Code Text	Registration failed because terminal failed to resolve NMS address
Severity	Error
Description	The terminal is attempting to register with the NMS (Network Management System), but is unable to resolve the server address using DNS.
Troubleshooting Steps	First verify via the Advanced LUI (General→Summary) that the terminal is receiving Management Router Advertisement (MRA) messages. If not, then escalate indicating the MRA messages are not being sent from the Gateway. If MRA messages are being received, then there is likely a routing issues at the Gateway between the Management Gateway servers and the DNS servers. Need to escalate.

State Code	22.3.15
State Code Text	Registration failed because terminal received invalid response from NMS
Severity	Error
Description	The terminal received a registration response from the NMS that it does not know how to handle.
Troubleshooting Steps	Verify that the software version running on the terminal is up to date. If terminal software is up to date, attempt to use another IDU. If problem persists, escalate.

State Code	22.3.16
State Code Text	Registration failed because terminal failed to authenticate NMS

Severity	Error
Description	During the registration process, the NMS authenticates the terminal and the terminal authenticates the NMS. For this state code, the terminal failed to authenticate the NMS.
Troubleshooting Steps	This state code is highly unlikely to happen, as it indicates an unknown 'imposter' NMS. Attempt to use another IDU. If problems persists, escalate.

State Code	22.3.21
State Code Text	Registration failed due to invalid terminal serial number
Severity	Error
Description	During the authentication phase of registration, the NMS was unable to load the associated encryption key for the terminal.
Troubleshooting Steps	This problem may occur if the NMS does not have the keys loaded for the terminal. Attempt to use another IDU. If the problem persists, escalate. Note that this problem may occur if an XCI (Barrett) terminal is attempting to commission on a NAD gateway.

State Code	22.3.22
State Code Text	Registration failed due to blacklisted terminal serial number
Severity	Error
Description	During the authentication phase of registration, the NMS will not authenticate the terminal because it is on the 'black list'.
Troubleshooting Steps	This problem will occur if terminal is on the 'black list' of terminals at the NMS. The terminal should be returned to Hughes. Attempt to use another IDU. If the problem persists, escalate.

State Code	22.3.23
State Code Text	Registration failed because terminal swap not allowed
Severity	Error
Description	The terminal is attempting to register as a swap for an existing terminal, but a 'Swap Allowed' has not been configured.
Troubleshooting Steps	Escalate to determine why a swap is not allowed.

State Code	22.3.24
State Code Text	Registration failed because terminal move not allowed
Severity	Error
Description	The terminal is attempting to (re)register with a different terminal location, but a 'Move Allowed' has not been configured.
Troubleshooting Steps	Either correct the terminal location to match the original values or escalate to determine why a move is not allowed.

State Code	22.3.25
State Code Text	Registration failed because registration information was not provided
Severity	Error
Description	The terminal is attempting to register but a complete set of registration information is not being sent to the NMS.
Troubleshooting Steps	Return to the Input Parameters page and verify that all fields have been provided. If the problem persists, attempt to use another IDU. If the problem

	still persists, escalate.
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State Code	22.3.26
State Code Text	Registration failed because NMS failed to authenticate terminal
Severity	Error
Description	During the authentication phase of registration, the NMS was unable to authenticate the terminal.
Troubleshooting Steps	This problem may occur if the NMS does not have the correct keys loaded for the terminal or there is an issue with the master key loaded into the terminal. Attempt to use another IDU. If the problem persists, escalate.

State Code	22.3.27
State Code Text	Registration failed because NMS received simultaneous registration messages
Severity	Error
Description	The NMS received multiple registration messages from the terminal within the timeout period.
Troubleshooting Steps	This may occur if there are reception or transmission errors between the terminal and the gateway. This problem should resolve itself within a few attempts. If the problem persists, escalate.

State Code	22.3.28
State Code Text	Registration failed because challenge response timeout
Severity	Error
Description	During the authentication phase of registration, there was a challenge response timeout between the terminal and NMS.
Troubleshooting Steps	This may occur if there are reception or transmission errors between the terminal and the gateway. This problem should resolve itself within a few attempts. If the problem persists, escalate.

State Code	22.3.29
State Code Text	Registration failed because NMS processing failure
Severity	Error
Description	There is a general processing error at the NMS during registration.
Troubleshooting Steps	This problem is typically caused by routing or other configuration issues at the gateway. If the problem persists, escalate.

3.8 PEP State Codes

<i>State Code</i>	23.0.1
<i>State Code Text</i>	All Backbones are down.
<i>Severity</i>	Error
<i>Description</i>	This state code is mentioned here for completeness. All backbones are not initialized only when the terminal is not associated with any IPGW.
<i>Troubleshooting Steps</i>	Need to investigate the reason for not associating with any IPGW.

<i>State Code</i>	23.0.2
<i>State Code Text</i>	PEP is disabled
<i>Severity</i>	Warning
<i>Description</i>	The PEP configuration is disabled. User might experience slow browsing / downloads as a result of this.
<i>Troubleshooting Steps</i>	This state code is typically seen when the PEP mode configuration is disabled, This situation can only be resolved by re-configuring the terminal.

<i>State Code</i>	23.0.3
<i>State Code Text</i>	No Classifier rule defined.
<i>Severity</i>	Warning
<i>Description</i>	No Classifier rule defined. User might experience slow browsing / downloads as a result of this.
<i>Troubleshooting Steps</i>	This state code is typically seen when no classifier rules are defined. This situation can only be resolved by configuring some classifier rules for the terminal.

3.9 FAP State Codes

<i>State Code</i>	24.1.1
<i>State Code Text</i>	Download Throttled.
<i>Severity</i>	Error
<i>Description</i>	Download throughput is throttled.
<i>Troubleshooting Steps</i>	This state code is typically displayed when terminals has used all its download allowance. This situation can be resolved when the customer buys additional download tokens or after the next refill time.

<i>State Code</i>	24.1.2
<i>State Code Text</i>	FAP information not available.
<i>Severity</i>	Error
<i>Description</i>	Associated IPGW not providing FAP information.
<i>Troubleshooting Steps</i>	This state code is displayed when a terminal is associated with a wall garden IPGW. Consult the association state code (21.x.x.x) to examine the reason for associating with wall garden IPGW.

3.10 Web Acceleration Client (WAC) State Codes

The WAC state codes indicate any issues or warnings with the Web Acceleration functionality of the terminal.

All WAC state codes start with **30**.

There are two (2) functional areas monitored for the WAC:

- *MBX Connectivity* – Monitors the MBX connectivity between the Web Acceleration Client (WAC) in the terminal and the Web Acceleration Server (WAS) at the Gateway. Functional code is 1
- *WAC Operation Mode* - Indicates the operational configuration of the WAC. Functional code is 2

3.10.1 MBX Connectivity

State Code	30.1.1
State Code Text	Web acceleration client in backoff state
Severity	Marginal
Description	The Web Acceleration Client (WAC) is unable to bring up the MBX TCP connection to the Web Acceleration Server (WAS)
Troubleshooting Steps	<p>This typically occurs when there is some sort of transport-related issue that prevents the WAC from establishing a TCP socket (MBX) connection to the WAS.</p> <p>Verify that all PEP backbones are up. Whenever there is a PEP issue, there will be an MBX issue. If PEP is up and there are no uplink or downlink issues (<i>including high error rates that may now show up as state codes but would be present in diagnostics</i>), then it is probably a bug in the MBX connection handling that results in the MBX getting into a stuck state. To try and work around that, go the Web Acceleration Control LUI page and reset the MBX to force it back to the idle state from where it will again attempt to connect again once there is user traffic from the browser.</p> <p>If that does not work, then, from the same page, try disabling then enabling the WAC as see if that helps. Because of the way the WAS pooling works, the WAC has a list of N WAS addresses to use. The WAS will record a failed MBX attempt as a black listed item and try to connect to a different WAS until it exhausts the list of all non-black listed addresses. So, it is highly unlikely that the WAC will be stuck in backoff due to a WAS-side issue. Three connection attempts are made to three different WAS before giving up and going into backoff. You can also consult the Web Acceleration MBX Summary LUI page to see details as to each connection attempt and the error reasons for their failures. This is the key information that should be captured and reported to engineering for a persistent backoff issue.</p>

3.10.2 WAC Operation Mode

State Code	30.2.1
State Code Text	Web acceleration Disabled by user
Severity	Marginal
Description	The Web Acceleration Client (WAC) has been disabled by the user through terminal LUI

<i>Troubleshooting Steps</i>	<p>The <i>Control</i> link under the Web Acceleration section of the Advanced LUI provides the ability to disable web acceleration.</p> <p>The Control link should be used to re-enable web acceleration.</p>
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<i>State Code</i>	30.2.2
<i>State Code Text</i>	Web acceleration Disabled via configuration
<i>Severity</i>	Marginal
<i>Description</i>	The Web Acceleration Client (WAC) has been disabled via configuration files sent from the Network Management System (NMS).
<i>Troubleshooting Steps</i>	<p>If possible, determine which Web Acceleration Client profile is being used for the terminal. Verify that web acceleration is enabled in the profile.</p> <p>If it's expected that web acceleration should be enabled for the terminal, force a configuration reconcile so that the terminal gets the most recent configuration.</p>